Index

to

1939 Transactions

A

Page

Abrasive Effectiveness Tests in Water Blasting 911
Abstract, Correlated, on Synthetic Sands, Bentonite and Clay-Bonding Materials 690
Accuracy of Electrical Determination of Carbon in Steel, Variables in 478
Acid Electric Steel Making Practice 329
Acid Open-Hearth Furnace Melting Practice 271
Acid Open-Hearth Refractories 534
Air, Preheating, in Crucible Furnaces 460
Alloy:
- Additions to Basic Open-Hearth Steel 292
- Cast Steels, High Strength 179
- Casting Association Standard Classification for Heat and Corrosion Resistant Alloys 551
- Iron Castings, Dense Structure in 513
- Steel Heat and Corrosion Resistant Castings 547
- Steel Production in Basic Electric Furnace 318

Alloys, Aluminum, Measuring Fluidity of 571
Alloys, Effect on Electrical Determination of Carbon in Steels 480
Alloys, Effect on Fluidity of Aluminum Alloys 577
Alumina Slag Modification of Double Slag Process for Basic Electric Furnace 317
Aluminum:
- Alloys, Development 61
- Alloys, Measuring Fluidity of 571
- Alloys, Patternmaking, Use in 963
- Bronzes, History and Development 57
- Effect on Red Brass 423
- Silicon Bronzes, Development 58

Annealed, Full, Copper Cast Steels, Properties of 231
Annealing Furnaces, Refractories for 540
Annealing Malleable Iron in Controlled Atmospheres 209
Antimony on Red Brass, Effect of 423
Anvils, Shear, Maintenance of, for Malleable Iron Castings 388
Apparatus for Rapid Determination of Carbon in Carbon Steels 471
Applications for High Lead Bronze Castings 208
Applications of Manganese Bronze 570
Atmosphere Gases for Malleable Iron Annealing and their Application 209
Austenite in Gray Iron, Determination of 496

B

Baking Conditions, Effect on Resin-Bonded Cores 104
Baking Cores for Bronze Pressure Castings 770
Basic Electric Furnace Practice for Steel 299
Basic Open-Hearth Furnace Practice for Steel 279
Bentonite, Effect on Properties of Resin-Bonded Cores 110
Bentonite, Effect on Properties of Steel Foundry Sands 658
Beryllium in High Conductivity Copper Alloys 782
Bibliography on:
- Clays and Clay Substances 905

Index

to

1939 Transactions

A

Page

Abrasive Effectiveness Tests in Water Blasting 911
Abstract, Correlated, on Synthetic Sands, Bentonite and Clay-Bonding Materials 690
Accuracy of Electrical Determination of Carbon in Steel, Variables in 478
Acid Electric Steel Making Practice 329
Acid Open-Hearth Furnace Melting Practice 271
Acid Open-Hearth Refractories 534
Air, Preheating, in Crucible Furnaces 460
Alloy:
- Additions to Basic Open-Hearth Steel 292
- Cast Steels, High Strength 179
- Casting Association Standard Classification for Heat and Corrosion Resistant Alloys 551
- Iron Castings, Dense Structure in 513
- Steel Heat and Corrosion Resistant Castings 547
- Steel Production in Basic Electric Furnace 318

Alloys, Aluminum, Measuring Fluidity of 571
Alloys, Effect on Electrical Determination of Carbon in Steels 480
Alloys, Effect on Fluidity of Aluminum Alloys 577
Alumina Slag Modification of Double Slag Process for Basic Electric Furnace 317
Aluminum:
- Alloys, Development 61
- Alloys, Measuring Fluidity of 571
- Alloys, Patternmaking, Use in 963
- Bronzes, History and Development 57
- Effect on Red Brass 423
- Silicon Bronzes, Development 58

Annealed, Full, Copper Cast Steels, Properties of 231
Annealing Furnaces, Refractories for 540
Annealing Malleable Iron in Controlled Atmospheres 209
Antimony on Red Brass, Effect of 423
Anvils, Shear, Maintenance of, for Malleable Iron Castings 388
Apparatus for Rapid Determination of Carbon in Carbon Steels 471
Applications for High Lead Bronze Castings 208
Applications of Manganese Bronze 570
Atmosphere Gases for Malleable Iron Annealing and their Application 209
Austenite in Gray Iron, Determination of 496

B

Baking Conditions, Effect on Resin-Bonded Cores 104
Baking Cores for Bronze Pressure Castings 770
Basic Electric Furnace Practice for Steel 299
Basic Open-Hearth Furnace Practice for Steel 279
Bentonite, Effect on Properties of Resin-Bonded Cores 110
Bentonite, Effect on Properties of Steel Foundry Sands 658
Beryllium in High Conductivity Copper Alloys 782
Bibliography on:
- Clays and Clay Substances 905

Page

Copper in Cast Steels ... 255
Core Practice ... 117
Deoxidizers in Gray Iron ... 739
Fluidity of Cast Metals ... 605
Graphite Formation in Cast Iron ... 849
Hardening and Tempering Gray Iron ... 416
Sand Testing ... 690
Temperature Measurements of Cast Iron ... 871
Blowing Practice for Converter Steel ... 260
Bonding Clays, Petrographic Study of ... 895
Bottom Building in Basic Open-Hearth Furnace ... 283
Bottom Sand for Acid Open-Hearth Furnace ... 273
Brass as Material for Patterns ... 964
Brass, Red, Effect of Aluminum and Antimony on ... 423
Brass, Red, Influence of Pouring Ladles on Quality of ... 753
Brasses, History and Development ... 55
Brinell Hardness, Red Brass, Effect of Aluminum and Antimony on ... 429
British Gas Industry Castings ... 118
Bronze, Manganese, Recommended Practices for Sand Cast ... 562
Bronze Pressure Castings, Production of ... 769
Bronzes, Recommend Practices for High Lead ... 195

C

Cadmium Additions to High Conductivity Copper Alloys ... 783
Carbon, Combined, Effect of Heat Treatment on, in Wheel Iron ... 1
Carbon, Rapid Method for Determining, in Carbon Steels ... 469
Carburizing Gases for Malleable Iron Annealing ... 213
Cast Iron as a Patternmaking Material ... 964
Cast Iron, Rapid Temperature Measurements of ... 854
Cast Iron (*See Also Gray Iron*)
Cast Steel (*See Also Steel*)
Cast Steel, Fluidity of ... 583
Cast Steels, Copper-Bearing, Properties of ... 229
Cast Steels, High Strength ... 179
Castability (*See Fluidity*)
Casting Practice for High Conductivity Copper Alloys ... 785
Castings for the British Gas Industry ... 118
Cereal Binders, Effect on Resin-Bonded Cores ... 111
Cereal Binders, Effect on Steel Foundry Sands ... 680
Charge, Typical, for Acid Open-Hearth Steel ... 274
Charge for Basic Open-Hearth Furnace ... 287
Charges for Induction Furnaces ... 267
Charging Practice for Basic Electric Furnace ... 303
Checkers, Acid Open-Hearth, Construction of ... 537
Chemical Analysis in the Non-Ferrous Foundry, Value of ... 73
Chromium:
Effect on Electrical Determination of Carbon in Steels ... 482
High Conductivity Copper Alloys ... 780
Nickel Corrosion Resistant Alloys ... 553
Classification of Heat and Corrosion Resistant Alloys ... 551
Classification of Jobs by Department in Foundry ... 927
Clay Bond, Effect on Hot Strength of Foundry Sands ... 365
Clay Substance in Molding Sand ... 935
Clays and Clay Substance in Molding Sands, Petrographic Study of ... 895
Cleaning Castings with Water-blast ... 909
Cleaning Defects in High Lead Bronze Castings ... 204
Cleaning Defects in Manganese Bronze ... 568
Cobalt in High Conductivity Copper Alloys ... 782
Collapsibility of Baked Oil Sand Cores ... 366

Page
Collapsibility of Foundry Sands ... 349
Combustion of Various Fuels ... 451
Committee Report on Radiography ... 794
Composition of Gray Irons, Effect on Physical Properties ... 491
Compressive Strength, Effect of Heat Treatment on Wheel Iron ... 28
Conduction of Heat ... 453
Conductivity Copper Alloys, Development ... 59
Construction of Acid Electric Furnace ... 331
Construction of Basic Open-Hearth Furnace ... 280
Construction of Open-Hearth Furnaces ... 272
Control, Carbon, Rapid Method for, in Carbon Steels ... 469
Convection, Heat ... 454
Converter Method of Steel Making ... 257
Cooling Oven Relieves Casting Stresses ... 173
Cooling Rate Influences Graphite Pattern in Gray Iron ... 833
Copper:
- Aluminum-Silicon Alloys for Deoxidizing Gray Iron ... 725
- Bearing Cast Steels, Properties of ... 229
- Castings, High Conductivity ... 779
- Chromium Cast Steels, Properties of ... 255
- Effect on Fluidity of Steel ... 592, 601

Core Mixtures for Bronze Pressure Castings ... 770
Cores, Collapsibility of Baked Oil Sand ... 366
Cores for High Lead Bronze Castings ... 198
Cores, Resin Bonded, Properties of ... 97
Corrosion Resistant Chromium-Nickel-Iron Castings ... 547
Corrosion Resisting Alloys for Castings ... 552
Cost:
- Converter Steel Production ... 263
- Crucible, in Crucible Melting ... 461
- Cupola Patching ... 93
- Induction Furnace Steel Production ... 268

Cracking, An Investigation of Causes of ... 147
Crucible Heats, How A ... 454
Crucible Melting, Efficiency in ... 450
Cupola Iron, 60,000 lb ... 873
Cupola Operation for High Strength Cast Iron ... 875, 876
Cupola Patching ... 89

D

Decarburizing Gases for Malleable Iron Annealing ... 210
Defects, Cause and Prevention of, in High Lead Bronzes ... 201
Defects Caused by Impurities in Manganese Bronze ... 568
Definition of Heat Unbalance ... 147
Definition of Pattern Equipment ... 956
Density, Red Brass, Effect of Aluminum and Antimony on ... 431
Deoxidation of Converter Steel ... 260
Deoxidation Reactions in Basic Electric Furnace ... 325
Deoxidizers:
- And Degasifiers Used in Basic Electric Steel Practice ... 322
- Effect on Fluidity of Malleable Iron ... 613
- Gray Iron ... 725
- Used in Acid Electric Steel Practice ... 339

Deoxidizing High Lead Bronzes ... 199
Deoxidizing Manganese Bronze ... 565
Desulphurization Reactions in Basic Electric Furnace ... 327
Determination, Rapid, for Carbon in Carbon Steels ... 475
Development of Open-Hearth Furnace ... 271

Page

Dies, Construction of, for Shearing Malleable Iron Gates..... 384
Diesel Engines, Pattern Equipment for..... 954
Dolomite, Analysis of..... 301
Double Slag Procedure in Basic Electric Melting..... 308
Ductility, Red Brass, Effect of Aluminum and Antimony on..... 429
Dumping Defects in High Lead Bronze Castings..... 204

E

Efficiency of Crucible Furnaces, Melting..... 460
Elastic Behavior vs. Heat Treatment in Wheel Iron..... 35
Electric Furnace Refractories..... 538
Electrical Method for Rapid Determination of Carbon in Carbon Steels 469
Electrical Resistivity, Red Brass, Effect of Aluminum and Antimony on..... 430
Elevated Temperature Properties of High Conductivity Copper Alloys 781
Elevated Temperature Properties of Sand, Progress on..... 805
End Wall Refractories in Acid Open-Hearth Furnace..... 535
Equilibrium Diagrams of Non-Ferrous Alloys, Use of..... 66
Eutectic in Gray Iron, Determination of..... 496

F

Facing, Mold, for High Lead Bronzes..... 197
Facing Sand Practice for Manganese Bronze..... 563
Factors:
  Affecting Properties of Gray Iron..... 493
  Determining Purchase of Crucible Furnaces..... 462
  In Evaluation of Jobs in Foundries..... 929
  Influencing Steel Fluidity..... 583
Fatigue Tests on Non-Ferrous Alloys, Value of..... 77
Fineness of Resin Binders on Core Properties..... 103
Finishing High Lead Bronze Castings..... 201
Finishing Manganese Bronze Castings..... 566
Fireclays, Effect on Properties of Resin-Bonded Cores..... 110
Flame Hardening Gray Iron, Effect of..... 404
Fluidity:
  Effect of Superheating on, of Cast Irons..... 620
  Of Aluminum Alloys..... 571
  Of Cast Steel..... 583
  Of Various Steels 592
  Red Brass, Effect of Antimony and Aluminum on..... 435
  Test on Malleable Iron..... 609
Fluorspar, Analysis of, for Basic Electric Furnace..... 302
Fluxes for High Lead Bronzes..... 199
Fluxes for Manganese Bronze..... 565
Foundry Job Evaluation..... 925
Foundry Problem, A Scientific Approach to..... 147
Foundry Sand Research Committee, Report on..... 803
French Specifications for High Strength Cast Steels..... 190
Fuel Consumption in Acid Open-Hearth Furnace..... 278
Fuel Costs, Relative, for Crucible Furnaces..... 460
Fuel for Basic Open-Hearth Furnace..... 290
Fuels, Heating Rates of Various, in Crucible Furnaces..... 458
Fuels, Heats of Combustion of..... 451
Furnace:
  Acid Electric, Melting Steel in..... 329
  Acid Open-Hearth, Operation of.....274, 275

Page

Acid Open-Hearth, Refractories in 534
Basic Electric, Melting Steel in 299
Converter, Use in Making Steel 257
For Testing High Temperature Properties of Sand 811
Induction, Use in Making Steel 264
Shell Temperatures, Crucible 455
Furnaces, Annealing, Refractories for 540
Furnaces, Crucible, Heating Rates of Fuels for 458
Furnaces, Electric, Refractories for 538

G

Gas in Steel Foundry Sand, Testing 685
Gas Industry Castings, British 118
Gates, Effect of Sand Temperatures Adjacent to 513
Gates, Shearing Malleable Iron 378
Gating Bronze Pressure Castings 774
Gating High Lead Bronzes 197
Gating Manganese Bronzes 563
Grain Size, Effect on Hot Strength of Foundry Sands 357
Graphite Pattern in Gray Iron, Influence of Undercooling on 831
Graphite Re-solution at Quenching Temperatures of Gray Iron 400
Graphitization During Rapid Heating of Gray Iron 403
Graphitization of Gray Iron at Quenching Temperatures 400
Gray Iron:
Castings, Producing Dense Structure in 513
Deoxidizers for 725
Effect of Composition on Properties of 491
Hardening and Tempering 397
Influence of Undercooling on Graphite Pattern in 831
60,000 lb. 873
Green Strength, Effect on Hot Strength of Molding Sands 361

H

Hardenability of Gray Iron 415
Hardening Cast Steels 189
Hardening Gray Cast Iron 397
Hardness of:
Gray Iron, Effect of Undercooling on 835
Mold, Effect on Hot Strength of Molding Sand 364
Non-Ferrous Alloys, Methods of Increasing 60
Red Brass, Effect of Aluminum and Antimony on 429
Tests on Non-Ferrous Alloys, Value of 76
Heading High Lead Bronzes 197
Heading Manganese Bronze 563
Heat:
Of Combustion of Fuels 451
Log for Acid Open-Hearth Furnace 277
Log of Alumina Slag Modification, Basic Electric Steel Heat 321
Log of Basic Open-Hearth Steel 296
Log of Double Slag Heat in Basic Electric Furnace 312
Log of Single Slag Basic Electric Heat 317
Losses in Crucible Shell 456
Methods of Transferring 453
Resistant Chromium-Nickel-Iron Castings 547
Resisting Alloys for Castings 550
Unbalance, Definition of 147
Heating Rates of Various Fuels in Crucible Furnaces 458
Heat Treatable Non-Ferrous Alloys 58
Heat Treated Copper Cast Steels, Properties of 231

Page

Heat Treating Gray Iron, Methods of 397
Heat Treatment of:
Corrosion Resistant Alloys, Effect on Corrosion Resistance 555
High Conductivity Copper Alloys 781
High Strength Cast Iron 879
High Strength Cast Steels 187
Heat Treatment—Its Effect on the Combined Carbon and Physical Properties of Wheel Iron 1
High Conductivity Copper Castings 779
High Lead Bronzes, History and Development 54
High Lead Bronzes, Recommended Practices for 195
High Strength Cast Steels 179
High Strength Cupola Iron 873
History and Development of Non-Ferrous Alloys 50
Homogenization of Cast Steels 186
Hot Metal Process for Basic Electric Furnace 316
Hot Sand Theory of Producing Gray Iron Castings 513
Hot Strength of Foundry Sands 349
Hydrogen Contents of Various Irons 747, 749
Hydrogen in Solid White Cast Iron 742

I

Immersion Thermocouple for Measuring Temperature of Cast Iron. 854
Impact Strength, Effect of Heat Treatment on Wheel Iron 29
Impact Tests on Non-Ferrous Alloys 77
Impurities, Effect on High Lead Bronzes 204
Impurities in Manganese Bronze, Effect of 568
Induction Furnace Steel Making Practice 265
Insulation of Crucible Furnaces 456
Intercrystalline Corrosion, Explanation of 553
Iron Bearing Brasses, History and Development 55
Iron Contamination in High Conductivity Copper Alloys 786

J

Job Evaluation in a Small Foundry 925

K

Keel Test Block for Cast Steels 230
Knives, Shear, Design of, for Removing Malleable Iron Gates 389

L

Ladle Linings for Red Brass 758
Ladle Refractories, Steel Foundry 540
Ladles, Pouring, Influence on Quality of Red Brass 753
Lead in Manganese Bronze, Effect of 568
Lime, Analysis of, for Basic Electric Furnace 302
Linings for:
Acid Electric Furnaces 331
Basic Electric Furnaces 300
Induction Furnaces 264
Ladles, for Red Brass 758
Losses, Metal, in Induction Furnaces 265
Low Alloy Copper Cast Steels, Properties of 241

M

Machinability of High Strength Cast Iron 881
Magnesite, Analysis of 301
Magnesium Alloys, Development 64

Page

Magnesium Alloys in Patternmaking, Use of 963
Malleable Iron:
Controlled Atmosphere Annealing of 209
Fluidity Tests 609
Gates, Shearing 378
Manganese Bronze, History and Development 56
Manganese Bronze, Recommended Practices for Sand Cast 562
Manganese, Effect on Electrical Method for Determination of Carbon in Steels 480
Match-plate Patterns, Making 964
Materials Used in Patternmaking 957
Measurement of Fluidity of Aluminum Casting Alloys 571
Medium Manganese-Copper Cast Steels, Properties of 244
Medium Manganese-Copper-Titanium Cast Steels, Properties of 244
Melting:
Bronze for Pressure Castings 771
Chamber Refractories for Acid Open-Hearth 535
Crucible, Efficiency of 450
Defects in High Lead Bronzes 201
Defects in Manganese Bronze 566
Efficiency of Crucible Furnaces 460
High Conductivity Copper Alloys 784
High Lead Bronze 199
Manganese Bronze 564
Practices, Steel 257, 264, 271, 279, 299, 329
Time, Crucible, Effect on Physical Properties 464
Melting Practice for:
Acid Electric Furnaces 334
Acid Open-Hearth Furnace 273
Basic Electric Furnace 299
Basic Open-Hearth Furnace 279
Induction Furnaces 267
Metal Analyses During Basic Open-Hearth Heat 297
Metal Defects in High Lead Bronze Castings 205
Metal Losses in Crucible Melting 462
Metallurgy of Heat Treatment of Wheel Iron 18
Method, Rapid, for Determining Carbon in Carbon Steels 469
Methods of Determining Fluidity of Aluminum Alloys 574
Microscope in Non-Ferrous Metallurgy 68
Microshrinkage in Steel Castings 180
Microstructure vs. Heat Treatment in Wheel Iron 23
Mineral Composition of Clays in Natural Molding Sands 935
Minerals in Foundry Clays 897
Mixing Conditions, Effect on Resin-Bonded Cores 107
Mixing Cupola Patching Materials 91
Mixtures, Sand, High Temperature Properties of 809
Moisture Content, Effect on Resin-Bonded Cores 106
Moisture Contents in Pattern Woods 962
Moisture, Effect on Hot Strength of Foundry Sands 355
Mold:
Facing for High Lead Bronzes 197
Fluidity, for Measuring Malleable Iron 610
Fluidity, for Testing Steel 587, 596
Hardness, Effect on Hot Strength of Molding Sand 364
Molding Bronze Pressure Castings 772
Molding Defects in High Lead Bronze Castings 203
Molding Methods for Gas Industry Castings 118

Page

Molding Sand:
Defects in Manganese Bronze 567
For Manganese Bronze 563
Petrographic Study of Clays in 895
Steel, Synthetic 653
Texture and Minerals in Clay Substance in 935
Molds, Sand Temperatures in 520, 521, 528, 532
Molybdenum, Effect on Electrical Method of Determining Carbon in Steel 482

N

Neutral Gases for Malleable Iron Annealing 211
Nickel:
Alloys, Development of Non-Ferrous 64
Effect on Electrical Determination of Carbon in Steel 482
Effect on Fluidity of Steel 601
High Conductivity Copper Alloys 782
Silver, Development of 58
Non-Ferrous Alloys, A Discussion of 50
Normalized Copper Cast Steels, Properties of 231

O

Oil Binders, Effect on Resin-Bonded Cores 111
Oil Sand Cores, Baked, Collapsibility of 366
Oxidation Reactions in Basic Electric Furnace 323
Oxidizing Slags in Basic Electric Furnaces, Analysis of 305

P

Patching, Cupola 89
Pattern, Definition of 956
Pattern Equipment, Quality, Making 954
Permanent Set vs. Combined Carbon in Wheel Iron 34
Petrographic Study of Clays in Molding Sands 895
Phosphor Bronze, History and Development of 52
Phosphorus Reduction in Basic Electric Furnace 315
Physical Properties (*See Properties*)
Plastic Cupola Patching 89
Pouring:
Bronze Pressure Castings 771
Defects in High Lead Bronzes 202
Defects in Manganese Bronze 566
High Lead Bronze 199
Ladles, Influence on Quality of Red Brass 753
Manganese Bronze 564
Rate, Effect on Mold Temperature 520, 521, 528, 532
Temperatures for High Strength Cast Iron 877
Preheating Air in Crucible Furnaces 460
Pressure Castings, Bronze, Production of 769
Pressure Resistance, Red Brass, Effect of Aluminum and Antimony on 436
Progress Report on High Temperature Properties of Sand 805
Properties of:
Bronze Pressure Castings 775
Cast Iron, Effect of Superheating on 620
Clay Minerals 898
Converter Steel 262
Crucible Steel, Effect of Melting Time on 464
Gray Irons, Effect of Composition on 491

Page
High Conductivity Copper Alloys....781, 782
High Lead Bronze Castings.... 206
Manganese Bronze.... 569
Quenched and Drawn Gray Iron.... 407
Some Copper-Bearing Cast Steels.... 229
Wheel Iron, Effect of Heat Treatment on.... 1
Wheel Iron vs. Combined Carbon.... 36

Q

Quenching Temperatures, Graphitization of Gray Iron at.... 400

R

Radiation of Heat.... 454
Radiography, Committee Report on.... 794
Rapid Method for Determining Carbon in Carbon Steels.... 469
Raw Materials Used in Acid Electric Furnace Practice.... 333
Raw Materials Used in Basic Electric Furnace.... 302
Reactions in the Basic Electric Steel Melting Process.... 323
Recarburization of Converter Steel.... 260
Recommended Practices for Sand Cast High Lead Bronzes.... 195
Recommended Practices for Sand Cast Manganese Bronze.... 562
Records, Testing, Value of.... 79
Red Brass, Effect of Aluminum and Antimony on.... 423
Red Brass, History and Development.... 53
Red Brass, Influence of Pouring Ladles on Quality of.... 753
Refining Acid Electric Steel Heats.... 335
Refining Steel in Basic Open-Hearth Furnace.... 290
Refractories Used in:
Acid Electric Furnace.... 331
Acid Open-Hearth Furnace.... 272
Basic Electric Furnace.... 300
Basic Open-Hearth Furnace.... 280
Induction Furnaces for Steel Production.... 264
Steel Foundry.... 534
Regenerators, Acid Open-Hearth, Construction of.... 537
Resin-Bonded Cores, Properties of.... 97
Risers, Effect of Sand Temperatures Adjacent to.... 513
Road Machinery, Pattern Equipment for.... 954
Roof Construction of Acid Open-Hearth Furnace.... 536
Roof Refractories for Electric Furnaces.... 539
Running Quality, Red Brass, Effect of Aluminum and Antimony on 435

S

Sand:
Analysis of, for Basic Electric Furnace.... 302
Bottom, Screen Analysis of, For Acid Open-Hearth Furnace.. 273
Defects in High Lead Bronze Castings.... 203
For High Lead Bronzes.... 196
For Manganese Bronze Castings.... 563
High Temperature Properties of, Report on.... 805
Molding, for Bronze Pressure Castings.... 773
Molding, Texture and Minerals in Clay Substance in.... 935
Research, Foundry, Report on.... 803
Temperatures at Various Locations in Molds....520, 521, 528, 532
Sands, Effect of Various on Resin-Bonded Cores.... 109
Sands, Foundry, Hot Strength and Collapsibility of.... 349
Sands, Molding, Petrographic Study of Clays in.... 895
Scientific Approach to a Foundry Problem.... 147
Section Size, Effect on Properties of Gray Iron.... 500

Page

Shearing Malleable Iron Gates 378
Shrinkage Allowances in Patternmaking 963
Sidewalls, Electric Furnace, Refractories for 538
Silica Flour, Effect on Properties of Resin-Bonded Cores 110
Silicon:
- And Chromium in Copper Alloys 780
- Bronze, Development 58
- Copper Cast Steels, Properties of 244
- Effect on Electrical Determination of Carbon in Steels 480
- Reduction in Acid Electric Furnace Practice 338

Silver Additions to High Conductivity Copper Alloys 783
Single Slag Process for Basic Electric Furnace 313
Slag:
- Analyses During Basic Open-Hearth Heat 297
- Pockets for Acid Open-Hearth Furnaces, Construction of 537
- Practice in Acid Electric Steel Furnaces 337
- Single, Process for Basic Electric Furnace 313

Slags, Oxidizing, in Basic Electric Furnaces 305
Specifications for High Lead Bronze Castings 208
Specifications for Manganese Bronze 570
Specimen Holder for Testing High Strength Cast Iron 891
Steel:
- Carbon, Rapid Method for Determining Carbon in 469
- Cast, Fluidity of 583
- Copper-Bearing Cast, Properties of 229
- Foundry, Refractories in 534
- Making, Types of 257, 264, 271, 279, 299, 329
- Molding Sands, Synthetic 653
- Sand Mixtures, High Temperature Properties of 809

Steels, Cast, High Strength 179
Storage, Effect on Resin-Bonded Cores 108
Strength, Hot, of Foundry Sands 349
Strength, Yield, Effect of Aluminum and Antimony on Red Brass 427
Structure of Cast Steels 180
Sulphur Control in Basic Electric Furnace 315
Superheating, Effect on Cast Iron 620
Synthetic Bonded Steel Molding Sands 653

T

Tap Hole Construction in Basic Open-Hearth Furnace 285
Tapping an Acid Electric Steel Heat, Precautions in 337
Tapping Temperature of Basic Open-Hearth Steel 295
Temperature Measurements of Cast Iron, Rapid 854
Temperature of Sand Adjacent to Gates and Risers, Effect of 513
Tempering Gray Cast Iron 397
Tensile Strength, Effect of Heat Treatment on Wheel Iron 26
Tensile Strength of Gray Iron, Effect of Eutectic on 498
Tensile Tests of Non-Ferrous Alloys, Value of 78
Test Bar for Rapid Determination of Carbon in Carbon Steels 475
Test Block, Keel, for Cast Steels 230
Tests on Car Wheel Irons 5
Texture of Clays in Natural Molding Sands 935
Thermocouple, Immersion, Used for Rapid Temperature Measurements of Cast Iron 854
Time at Temperature on Combined Carbon, in Wheel Iron, Effect of 32
Tin Additions to High Conductivity Copper Alloys 784
Tin Bronzes, History and Development 51
Titanium, Effect on Fluidity of Cast Steel 592, 601

Page
Tools Used in Patternmaking 956
Tractors, Pattern Equipment for 954
Transferring Heat, Methods of 453
Transverse Strength, Effect of Heat Treatment on Wheel Iron 28
Tungsten-Graphite Thermocouples for Measuring Temperatures of Cast Iron 859

U

Undercooling, Influence of, on Graphite Pattern in Gray Iron 831

V

Variables in Determining Carbon in Steels Electrically 478

W

Warpage in Wood Patterns, Preventing 961
Water-blast for Cleaning Castings 909
Wheel Iron, Effect of Heat Treatment on 1
White Iron, Hydrogen in Solid 742
Woods Used in Patternmaking 957

X

X-Rays in the Non-Ferrous Foundry, Use of 72

Y

Yellow Brass, History and Development of 57
Yield Strength, Effect of Aluminum and Antimony on Red Brass .. 427

Z

Zinc Additions to High Conductivity Copper Alloys 784